Flightfax

ARMY AVIATION
RISK-MANAGEMENT
INFORMATION

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Everybody talks about it,

but nobody does anything about it.

No procedures exist that can guarantee safe flight through a thunderstorm . . .

Food for thought. Seven Class A flight accidents took 2 lives and destroyed 5 aircraft during the first 4 months of FY 98. Let us not forget that the difference between Class A and Class C accidents often can be measured in inches and seconds. Think about it.
—BG Burt S. Tackaberry, Commanding General, U.S. Army Safety Center

It's true that most people don't do anything about the weather, including, in some cases, Army aviators. Now, that's not to say we shouldn't be doing something. We might not be able to change the weather, but we can—and must—do some things about it. What we can do is respect it. And learn all we can about it. The unpleasant fact is that some of us haven't developed the professional respect we need because we haven't fully boned up on what adverse weather can do.

In the course of any day's flight, we could run into some kind of weather condition that could give us trouble and some anxious moments if we're caught unprepared. Even as you're reading this, some Army aviator somewhere is preparing to cope with an ominous mass of black clouds looming on the horizon. Or if it isn't a storm, it could be too many clouds and too little visibility. Or clear air turbulence. Or fog.

Staying on top of the weather business is a continuing challenge, but it's one all of us must meet. We must acquire enough professional knowledge to stay out of trouble, which is another way of saying we need a healthy respect for the weather.

Take thunderstorms. Read about them in any scientific journal and you'll find that they're a seething mass of forces caused by a variety of factors and that no two are ever alike. You'll read hair-raising facts about updrafts and downdrafts in excess of 65 knots, hailstones as big as golf balls, blinding rain, severe icing, lightning, and surface wind shears that can rip up an aircraft like confetti. You won't have to read much to reach the sensible conclusion that the inside of a thunderstorm is a good place not to be.

Inside a thunderstorm is a good place not to be.

Thunderbumper time's on the way

The months having the highest frequency of storms—June, July, and August—will be here before we know it. So it's not too early to give summertime flying some thought and review what we know about thunderstorms.

People who keep up with such things estimate that about 44,000 thunderstorms churn daily over the earth's surface, with at least 1800 in progress at any given moment. That adds up to a lot of lightning bolts, high winds, rain, hail, and vicious turbulence.

Since no aircraft can withstand the full impact of the tornadic forces often generated by thunderstorms, avoidance is the best policy. One of the best protections against encountering thunderstorms in flight is being forewarned of their existence. If available weather information hints at thunderstorm possibilities, if your weather forecaster confirms their existence, and if those clouds in the distance begin to look boiling, think again before making the "go" decision.

The best safeguard against thunderstorm flying is a thorough preflight weather briefing. But that's not enough by itself. Aviators must stay aware of what's going on weather-wise throughout every flight. For example, study the clouds. When billowy white "puffs" begin to increase in number and size, take heed. These clouds can change in form and become cumulonimbus, with varying degrees of turbulence, rain, lightning, and, sometimes, hail. Towering cumulus can change into a raging thunderstorm in just a few minutes. Excessive radio static may also indicate the approach of a storm.

One positive sign of a thunderstorm is the "roll cloud" that extends down from the main base of the storm. This highly turbulent cloud is located along

Another type of turbulence

Although turbulence caused by thunderstorms is the most violent variety, don't make the mistake of overlooking the turbulence associated with heat and terrain.

Heated air rises in the form of thermals, drawing cooler air along the ground. This air "boils" and "bubbles" as it flows over hills and hits peaks and ridges. Anticipating this kind of turbulence and knowing where you are most likely to encounter it can keep you on guard. Areas bare of vegetation, hilly or broken terrain, and an abrupt change from one kind of terrain to another all lend themselves to turbulence. Waving branches, smoke trails, and blowing dust serve as positive indicators that the air below is acting up.

the front and bottom of a violent thunderstorm. Its appearance means plenty of severe weather lies within the storm. An aircraft flown too close to a roll cloud could be inadvertently hurled into the storm. The possibility of this happening is greatest at night or when the roll cloud is hidden behind other clouds surrounding the storm. While radar can provide a picture of what lies ahead, it's important to remember that clear air outside the clouds can contain severe turbulence that even radar cannot detect.

Unwary aviators who don't know about the roll cloud—which isn't always visible—have been known to try to avoid a storm by hedge-hopping under it. They've also been known to get flattened by the turbulence they wham into long before they think they're close enough to a storm for it to reach out for them.

When thunderstorms are associated with a frontal system, they may be organized in long bands that progress ahead of the front. These are commonly referred to as "squall line thunderstorms" and are the most intense thunderstorms imaginable. Squall lines usually appear in the late afternoon and last until dark or longer. No attempt should be made to climb over, slip under, or penetrate a solid squall line. Bear in mind that no procedures exist that can guarantee safe flight through a thunderstorm.

In addition, gusty surface winds and downdrafts that precede a thunderstorm can be exceptionally violent. Trying to take off or land when a thunderstorm is approaching an airfield is an extremely hazardous practice. Vortices, or tubes, of tornadic or near-tornadic intensity may be encountered in and under innocent-looking lines of clouds extending from thunderstorms. These vortices are invisible and may exist as far as 20 nautical miles from the associated thunderstorm. Sometimes their presence can be detected by noting dust-whirls over land areas or swirls on the surface of water.

When faced with deteriorating weather during flight, deciding the best course of action is not always easy. Can you safely circumnavigate the storm? Should you land at an alternate airfield? Or should you turn back? One important criterion that can help you reach the right decision is to ask yourself whether or not a decision to continue flight would rely to any degree on the element of chance to ensure your safety. If the answer is yes, then you'd better make another decision. And the importance of your decision cannot be emphasized too strongly. If you are to head for an alternate field or make a 180-degree turn, the time to do it is before you get caught inside a storm. Once trapped, you're committed to continue. There's no turning back.

When it comes to summer flying, you must stay constantly alert. And bear in mind that the only recommended and safe policy when confronted with thunderstorms is to avoid them.

As a general rule, suspect tornadic vortices any time a thunderstorm forecast includes the possibility of tornadoes.

A flashy show of force

Various terms have been used to describe lightning, but few capture the awesomeness of this natural phenomenon. It's hard to believe that several thousand shows of force are flashing at any one time somewhere in the world. They provide a spectacular show, particularly if you're in an aircraft.

Lightning can occur almost any time, but statistics show that lightning occurs most often in clouds, within about 5000 feet of the freezing level, in light rain and some turbulence, and within 8°C of the freezing level. Most lightning strikes on helicopters occur below 6000 feet, but some have occurred as high as 9000 feet. Rarely are aircraft struck when operating below 1000 feet agl.

The risk of a lightning strike injuring a person

onboard an aircraft is relatively insignificant. Possibilities include mild electric shock from the strike, and, more likely, temporary blindness from the flash. Such blindness usually occurs at night and lasts only 30 seconds or less. (It's interesting to note that night-vision devices will recover from a lightning flash even faster than the eye.)

There's a chance that a lightning strike could cause physical damage to an aircraft. Lightning is most likely to strike sharp or pointed areas such as wing and rotor tips, elevators, and rudders. Theoretically, a lightning bolt should pass through aircraft metal structures without causing damage. But it doesn't always, as is attested to occasionally by wrinkled, burned, and split aircraft skin, shattered structures such as radomes, and damage to wiring and electronic equipment.

The best protection against a strike is to avoid lightning altogether, and doing so isn't as difficult as one might think. Lightning rarely occurs without some or all of the following conditions being present:

- Clouds
- Precipitation, particularly icy types
- OAT near 0°C
- Progressive buildup of static
- Light turbulence
- Altitude between 10,000 and 15,000 feet

If combinations of these conditions cannot be avoided, take as many of the following actions as possible:

- Avoid areas of heaviest precipitation.
- Reduce airspeed to slow static buildup.
- Avoid freezing level by at least 8°C.
- Turn up cockpit lighting.

If a strike occurs, monitor equipment for malfunctions. In addition, if you encounter unforecast weather conditions, report them so that other aviators may be warned.

Thunderstorms: A quick review

- The safest course is away from the thunderstorm area. Go a few miles out of your way or land and wait it out if the shortest and most direct route is through the storm area.
- Lowering ceilings and rain showers may indicate thunderstorm activity.
- Don't be fooled by gentle winds and rain; you could be flying into the teeth of a thunderstorm.
- Excessive radio static is a sure sign of a thunderstorm in the area.
- Don't land or take off in the face of an approaching thunderstorm. A sudden gust front and associated low-level turbulence and wind shear could cause loss of control.
- Don't attempt to fly under a thunderstorm even if you can see through to the other side. Turbulence and wind shear under the storm could be disastrous.
- Destructive hail can be tossed from thunderstorms into adjacent clear areas. Bear this in mind if you're ever tempted to sneak between thunderstorms.
- Don't trust appearance to be a reliable indicator of the degree of turbulence inside thunderstorm.
- Avoid by at least 20 miles any thunderstorm identified as severe.

When in doubt, turn about.

The best pilot in the unit

As the commander continued the eulogy, I reflected on his statement and stared at the flag-draped casket in front of the altar. That mahogany box contained all that was left of "the best pilot in the unit"—precious little, since the accident site was a smoking hole in the side of a local mountain. He had missed clearing the ridge by only 10 feet.

Rumor had it that the cause was pilot error, but I couldn't buy that. Pilots of his caliber don't just fly into mountains. There had to be something else—an engine failure or loss of tail rotor. I was sure he had wrestled with the aircraft every inch of the way, trying to get it airborne and save his crew. If he couldn't save that helicopter, no one could.

He thrived on challenge. He did things I could only dream about. We both flew formation, but he could fly tighter. When flying low-level, he flew lower. He flew longer hours and took off in weather that kept me on the ground. His briefs and debriefs were just that—brief.

"Nobody ever learned about flying from talking about it," he said. He didn't believe in preflights—except on checkrides.

"This aircraft has had its daily, right?" he once asked me. "If it flew in, it'll fly out."

The XO was speaking now, recounting the time 6 months ago when the late pilot had won a medal for serving as officer in charge of a short-notice surge operation. He won all the accolades when he managed to target the high-value "enemy" unit without being detected. It had been a black, moonless night, and he had closed to within 2 miles by flying at 40 feet and 120 knots. I had flown earlier that night, but I wouldn't trust myself or the autopilot below 125 feet. It was all I could do to relax my death grip on the cyclic. But then, I wasn't him.

"Heck," I remember his saying later, "I could have gone 10 feet lower, but I thought my copilot would have a heart attack."

I also knew he had flown more than 50 hours during that 5-day period; he had even launched on an 8-hour mission without having slept in the previous 30 hours. But everyone knew he could handle it. When he wasn't flying, he was directing the action. He was that type of guy: He liked to manage everything. That's why he was always considered for the difficult tasks and why he always got the medals.

No one was going to miss him more than our maintenance officer. He had a reputation for getting the bird up no matter what. If the numbers were close, the plane was up.

"It's all in how you look at the gauges," he said. "Besides, some engineer has added a fudge factor." Many times, he completed a functional check flight well after official sunset.

"It's not *really* nighttime while it's still pink," he claimed. He was sure the commander would give him a waiver if he asked for it. It's not that he broke any rules. He just "bent" them a little.

Then there was the Air Medal. He launched in zero-zero weather—he had a special instrument card—to rescue an A-7 pilot who had ejected 15 miles off the coast. As it turned out, a Coast Guard cutter got there first and made the rescue. However, his basic flight instruments went "boots up" and the airmanship he demonstrated in getting back earned him the Air Medal. He later confided to me that in the rush to launch, he had skipped the checklists that would have probably caught the problem. Checklists were for people like me. He didn't need them.

I glanced at his wife in the front row, stoically listening to the service. His young son and daughter sat beside her, neither seeming to grasp the fact that they would never see their father again.

Checklists were for people like me. He didn't need them.

In the end, it was a day VFR hop that got him. He always flew a little too low and a little too fast in the valleys up the mountains. He was "training" for his upcoming deployment to a hot overseas area. Never mind that nap-of-the-earth was not our mission.

"When the balloon goes up," he always said, "your mission is whatever they tell you it is. You've got to be ready for anything."

That day, power required exceeded power available, the most basic of truths. He had pushed the envelope a little too far this time and didn't make it. He made a nugget's mistake—him, the best pilot in the unit.

"Ashes to ashes, dust to dust," the chaplain said. "From dust we came and to dust we shall return...."

Could I have prevented this? Could anyone? All the signs were there. What could we have done?

It suddenly occurred to me that the comment the commander had made in his eulogy was all wrong. The deceased was *not* the best pilot in the unit. The best pilot is the one who knows his limitations and doesn't push them. The best pilot understands that the rules are for everybody, not just the other guy. The best pilot in the unit is the one who adds that little margin of safety instead of taking it away.

The best pilot in the unit is the one who is still with us.

—adapted from an article by LCdr. Lawrence Downs, Jr., in *Approach*

JP-8 +100 fuel-additive warning

The Air Force and Navy are operationally testing an experimental aviation jet-fuel additive commonly referred to as "plus 100." This additive is designed to increase the thermal stability of aviation jet fuel and reduce maintenance costs. However, the Army has not tested and certified the fuel for use in Army equipment. Therefore, Army aircrews obtaining aviation fuel at Air Force and Navy facilities must ensure that their aircraft are not refueled with aviation fuel containing the +100 additive. In addition, Army aviation maintenance personnel should ensure that fuel containing the additive is not allowed to enter into Army refueling or petroleum-distribution systems.

The JP-8 +100 fuel additive is still being field-tested by the Air Force; this field testing will not be completed until FY 2000. While the potential benefits of the +100 additive are important (less carbon buildup on engine parts and decreased maintenance), it can also have detrimental effects on fuel-distribution systems. The additive disarms filter separators, has a detergent effect on tank and piping surfaces that can increase fuel-filter plugging during initial use, and makes aqua-glo water detector and AEL free-water detector readings unreliable. In addition, there is currently no practical means to detect the presence of the +100 additive in aviation fuel.

Any activity inadvertently receiving aviation fuel with the +100 additive into an aircraft or refueling/distribution systems should contact the U.S. Army Petroleum Center immediately.

—Ms. Ileana Yost, U.S. Army Petroleum Center, DSN 977-6053/4392 (717-770-6053/4392), iyost@usapc-emh1.army.mil

Flightfax reader survey

Please help us keep *Flightfax* relevant to your needs by completing the questionnaire on pages 7 and 8. Return the survey by using the pre-addressed mailer on page 8, or fax it to Ms. Sally Yohn, DSN 558-9478/3743 (334-255-9478/3743).

Rotor-blade reminder

Fortunately, we don't have a lot of accidents in which people are injured by rotor blades. But when they do happen, they're usually serious. Even a momentary lapse of attention can be deadly to people who work near operating aircraft.

The most serious hazard is that of being hit by the main or tail rotor blades when approaching or leaving an aircraft while it's in operation. Following are a few reminders about what to do when you're near an aircraft with the rotors turning.

- Keep your head down when approaching a helicopter. Remember that the tops of the main-rotor blades droop when the engine is idling, so there's less clearance at the ends of the blades than at the rotor hub.
- Be especially careful if the ground slopes.
- Go around, not over, any obstructions on the ground.
- Approach helicopters with tail rotors from the side or—preferably—45 degrees to the front, in view of the pilot and crew. Never approach from the rear. The tip of the tail rotor may be as little as 1½ feet off the ground.
- Except for CH-47s, go around the front, never around the rear, of operating aircraft.
- Approach CH-47s from the side or rear, never from the front. When operating, the forward rotor blades can be as little as 4 feet off the ground.

Flightfax
READER SURVEY

Return this questionnaire using the pre-addressed mailer on the back or fax it to Ms. Sally Yohn, DSN 558-9478/3743 (334-255-9478/3743).

Name (optional) _____ Rank/Grade _____

Duty status
___ Active Army
___ Army Reserve
___ Army National Guard
___ DA Civilian
___ Civilian contractor
___ U.S. Air Force
___ U.S. Navy
___ U.S. Coast Guard
___ Foreign ally
___ Industry
___ Other *(specify)* _____

Flight hours
___ Not rated
___ 1-500
___ 501-1000
___ 1001-1500
___ 1501-2000
___ 2001-2500
___ 2501-3000
___ 3001-3500
___ More than 3500

Duty assignment
___ Operational flying
  ___ Unit commander
  ___ Staff
  ___ Primary duty
  ___ Enlisted crewmember
___ Aviation safety
  ___ Unit
  ___ Division headquarters or below
  ___ MACOM
  ___ DA
___ Aviation staff
  ___ Unit
  ___ Headquarters

Duty location
___ CONUS
___ Outside CONUS

How often do you read Flightfax?
___ Every month
___ Every other month
___ Every 3 months
___ Rarely

How much of Flightfax do you read?
___ 100%
___ 75%
___ 50%
___ 25%
___ Less than 25%

Where do you read Flightfax?
___ Office
___ Home
___ Flight ops
___ Other *(specify)* _____

When do you usually receive Flightfax?
___ Early in the month it's dated
___ Mid month in the month it's dated
___ Late in the month it's dated
___ The month after it's dated

Have you visited the Army Safety Web Site?
___ Yes
___ No

How do you receive Flightfax?
___ Directly from USASC
___ Through local distribution
___ I don't know

Do you have access to Flightfax on the world-wide web?
___ Yes, at work
___ Yes, at home
___ No

How would you prefer to receive Flightfax?
___ In printed form
___ Electronically (e-mail, web)
___ Other *(specify)* _____

Do you have e-mail at work?
___ Yes
___ No

How do you use the information in Flightfax?
___ Topics for safety meetings
___ Topics for unit publications
___ Items for bulletin boards
___ Topics for directives
___ Items for reading file
___ To keep myself informed
___ Source of authority on safety issues
___ Other *(specify in Remarks section)*

Use this scale to rate each of the following.

None= 1 Low= 2 Medium= 3 High= 4 Extremely High= 5

Rate these *Flightfax* features in terms of their value to you in your current assignment.

___ Lead articles
___ Selected accident briefs by type aircraft
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___ "War Stories" (Risk Management Lessons Learned)
___ Recap of aviation safety messages
___ "Shortfax" (Keeping You Up To Date)
___ Posters
___ Broken Wing Award recipients
___ Web site updates
___ Monthly Class A accident update
___ STACOM (flight standardization issues)
___ Seasonal articles
___ Life support equipment information
___ Statistical summaries

Rate the overall quality of *Flightfax*.

Content
___ Accuracy
___ Adequacy of coverage
___ Choice of topics
___ Credibility
___ Interest to Army aviation personnel
___ Timeliness

Layout
___ Appearance
___ Format
___ Illustrations
___ Readability

Rate the following safety publications in terms of their value to you in your current assignment.

___ *Flightfax*
___ *Countermeasure*
___ *Approach*
___ *Flying Safety*
___ *PS magazine*

Rate the following types of information in terms of your interest in and need for it.

___ In-depth reports of accidents, causes, and cures
___ Hazards, risks, and controls
___ Risk-management process
___ Maintenance topics
___ Accident rates
___ Statistical studies
___ Lessons learned
___ Technical information on equipment and systems

How can we improve *Flightfax* or make it more relevant to your needs?

_____

_____

_____

Remarks _____

_____

_____

Fold

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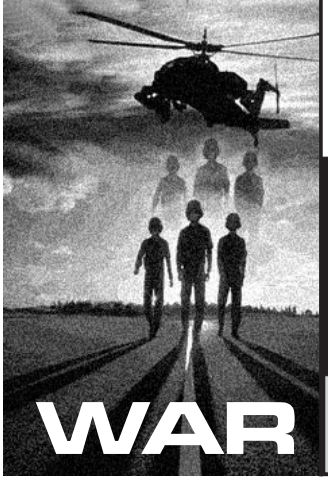


RISK MANAGEMENT LESSONS LEARNED

WAR STORIES

What's a show stopper?

I was recently asked the question, "What do you consider to be a show stopper?" After only a few minutes' thought, the following incident popped to mind.

We were on a training exercise during, of course, the best time of year—flu season in weather not conducive to living in a tent. The dreaded bug was working its way through the unit. We were conducting operations both day and night, and our sleep cycles were always being interrupted by movement through the tent. I should also mention that, as with most small-unit operations, we conducted all our briefings and rehearsals in that same tent. And, yes, even the troop TOC was in there.

Several of our pilots came down with the flu, requiring medical attention from the flight surgeon in the field. One of these pilots was a PC, and his illness resulted in several healthy pilots being unable to fly because they weren't PCs. One of these pilots was a platoon leader, so he had a vested interest in getting his sick PC up and running.

After about 3 days of recovery, the PC was convinced he was ready to go out and help win the war. After all, staying in the tent performing fire guard and TOC watch was not a lot of fun.

After receiving their briefing, the PC and the platoon leader headed out to get a little fresh air and some flight time. They did fine through the first and second fuel load. After a number of flight hours and much movement through the maneuver area, they became a little misoriented and decided to land and find themselves on the map.

While making a turn to land into the wind, the PC misjudged his altitude and flew into the ground. At that point, the two pilots were along for the ride. The good news was that they were able to crawl out of the wreckage and dust themselves off. The bad news was that we destroyed an aircraft that day. The aircrew and the aircraft were out of the fight for the rest of the exercise. But that wasn't the end of it. All of our aviation assets were put down due to the accident.

So, an ill pilot—even an ill PC—is not a show stopper.

A show stopper is a Class A accident.

—CW5 Mike Moorehead, Aviation Systems and Investigation Division, USASC, DSN 558-3703 (334-255-3703), moorehem@safety-emh1.army.mil

Accident briefs

Information based on *preliminary* reports of aircraft accidents

AH64

Class B

A series

■ Suspected drive train overtorque during takeoff from field site resulted in Class B damage.

Class C

A series

■ During formation flight, smoke was seen coming from aircraft and SDC warning light came on. During emergency shutdown after landing, PC (rear seat) saw smoke in cockpit and directed the PI to egress. During shutdown, main rotor blades contacted aircraft, reportedly destroying one blade and the PNVS. No inflight or postlanding fire ensued. Incident is under investigation.

D series

■ Engine cowling door opened during training flight, and engine heat blanket was blown into main-rotor system. Three main-rotor blades were damaged; two will require depot-level maintenance.

Class E

A series

■ During slope operations in sod, utility hydraulic psi light and utility hydraulic low light came on, and utility pressure gauge went to zero. Aircraft was landed and shut down. On postflight, hydraulic manifold was almost empty, and hydraulic fluid was sprayed throughout TI catwalk.

■ No. 1 engine fire light came on at high hover. Crew landed and immediately pulled fire handle. After activation of fire bottle, light went out and aircraft was shut down. Inspection revealed no indications of fire. No. 1 engine fire bottle and firing equipment were replaced.

■ During warm refuel operation, IP heard series of loud reports. He at first thought that refuel personnel were tapping on his canopy for his attention, but then the APU failed, causing aircraft to experience hard shutdown. APU was replaced.

■ During preflight inspection, hole was found on outboard leading edge of tail rotor blade. Caused by FOD during confined-area operations at unimproved landing area.

CH47

Class E

D series

■ During external load operations, aircraft settled onto vertical exhaust snorkle of HMMWV. Fuselage skin sustained 6x12-inch tear.

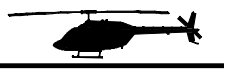
■ During cruise flight at 140 KIAS, fuel gauge needle rotated backwards 360 degrees and fuel totalizer read 9700 pounds, which is more than aircraft holds. Maintenance replaced fuel quantity indicator.

■ No. 2 engine accelerated through ground to flight with ECL in ground. ECL was positioned to stop with no immediate response. When fire handle was pulled, torque went up to 109 percent on No. 2 engine; no other limits were exceeded. Maintenance replaced No. 2 N1 control box.

■ Crew detected high frequency vibration in combining transmission at 10-foot hover and on ground. Maintenance replaced combining transmission.

■ During postflight, PC discovered top transmission seal seeping. Flight engineer serviced transmission by adding oil. After next flight, maintenance determined that seal was leaking excessively due to fact that slider oil seal had not been installed during scheduled maintenance.

OH58



Class A

D(I) series

■ During multi-ship aerial recon mission, lead aircraft reportedly struck wires. One pilot sustained serious injuries; the other pilot was treated for minor injuries and released. Aircraft was reportedly destroyed. Investigation is in progress.

Class C

C series

■ During pinnacle landing, nose of aircraft pitched up. As PI applied forward cyclic to arrest pitch, one main-rotor blade contacted upper WSPS. Aircraft was shut down without further incident.

D(I) series

■ Aircraft drifted rearward during simulated hellfire-missile engagement. Main- and tail-rotor blades contacted trees during re-masking. Aircraft landed without further incident. Investigation is in progress.

■ Tgt rose sharply when aircraft was restarted about 30 minutes after uneventful maintenance test flight for rotor smoothing and subsequent blade adjustment. Pilot verified that throttle was still closed and continued to motor engine in attempt to cool it. Engine continued to engage even after the other pilot closed the fuel valve. Aircraft was shut down. Incident is under investigation.

Class E

C series

■ After 2.3 hours of flight and at engine idle, transmission chip light came on when attempt was made to run up aircraft to 100 percent. Aircraft was immediately shut down. Maintenance discovered that piece of transmission gear had broken off. Transmission was replaced.

D(I) series

■ During hover taxi for takeoff, PI stated that left pedal did not work. IP took controls and confirmed that left pedal inputs could not be made. IP reduced power and landed without incident. Maintenance found deformed cotter pin on control tube running through avionics compartment. Suspect it snagged on soundproofing.

■ Left door came off in flight. Door was replaced.

TH67

Class B

A series

■ During hover to takeoff point, rpm

was lost and nose pitched forward. IP applied aft cyclic to arrest pitch, and tail rotor hit ground. Aircraft initiated spin, IP fully lowered collective, and aircraft came to rest upright. Tail boom was nearly severed just forward of 90-degree gearbox, main transmission deck buckled, and undercarriage was damaged. Accident is under investigation.

Class E

A series

■ Circuit breaker popped during engine start. IP reset it, but it popped again within 5 seconds, this time accompanied by strong electrical smell. Maintenance replaced condenser blower assembly.

UH1

Class E

H series

■ Master caution light came on during takeoff, followed by engine chip light. Engine oil pressure light then came on, followed by engine overspeed. Crew performed emergency governor operations and, as they began to descend, engine N2 went to zero indicated and engine failed at 100 feet agl. PC put aircraft into autorotation and impacted ground with no visible damage.

■ During taxi, high-pitch sound was heard from transmission area. Aircraft was landed and shut down without incident. Maintenance replaced main inverter.

UH60

Class C

A series

■ Postflight inspection following confined-area operations revealed damage to three main rotor blade tip caps.

K series

■ Aircraft was in hot refuel point prior to maintenance test flight. At about 1400 pounds indicated fuel in main tanks, loud sound was heard in cabin area. PC noticed that No. 1 auxiliary fuel cell was seeping fuel and that both auxiliary fuel cells were unusually swollen. Refuel operations were immediately ceased. Aircraft was taxied back to parking, and test flight was terminated. Cause not reported.

■ On approach to building at MOUT site at night, aircraft tail boom contacted building. Tail boom was dented just forward of tail wheel and stringer was cracked.

Class D

A series

■ Aircraft was at 100-foot-agl hover when rescue hoist training weight began to oscillate while crew chief was reeling it in. Oscillation increased as load got closer to aircraft, but crew chief continued to reel it in. Load struck bottom of aircraft twice before cable snapped. Damage consisted of two large dents, one under the fuel cell on No. 1 side and the other on and around the ADF loop antenna.

■ Brakes were set when aircraft touched down during roll-on landing at 55 KIAS. Both main landing gear tires blew as IP applied collective pitch to begin go around. Aircraft was hover taxied to parking without further damage.

■ IE turned on de-ice when aircraft entered IMC. Crew soon noticed five cracks forming at top of windscreen. Aircraft landed without incident, and maintenance replaced windscreen.

Class E

A series

■ Crew heard rumbling and felt vibration through cyclic, collective, and seat during landing. After normal shutdown, maintenance found excessive amount of oil/lubricant on rotor cabin top. Source of fluid is unknown.

■ During landing on parking pad after 1.5-hour flight, No. 2 engine shut down. Crew completed emergency shutdown and exited aircraft due to smoke coming from exhaust and intake. Caused by ECU failure.

C12

Class D

F series

■ During taxi, left wing contacted right wing of another C-12 that was conducting stationary engine runup checks. Both aircraft were taxied to parking and shut down without further incident. Inspection revealed damage to left position light lens and vertical position light glare shield of first C-12 and damage to the right position light lens and two rivets along a stringer of the other.

■ During descent and approach for landing, aircraft was struck by bird. Aircraft landed without further incident.

■ During postflight inspection, maintenance discovered damage to left wing on outboard side of stall warning vane. Crew had neither heard nor felt any indication of bird strike. Stall warning vane and mounting doubler were repaired, and deice boot was replaced.

Class E

F series

■ During cruise flight, right prop rpm gauge started fluctuating with no change in noise or engine torque. Propeller rpm gauge continued to decrease and bounce between 300 and 500 rpm. Crew aborted mission and returned to airport. Caused by tachometer generator failure.

■ During taxi for takeoff, excessive pressure on rudder pedals was required to steer aircraft. Mission was aborted. Caused by failure of solenoid on rudder boost.

O5

Class E

DHC-7

■ During climbout, cabin over-pressurized to below sea level at a rate of 2,000 fpm. Crew dumped cabin pressure using auto-dump switch. Flight continued unpressurized. Trouble-shooting revealed faulty cabin pressure controller.

■ During engine start, starter would not engage when No. 2 engine was selected. Troubleshooting revealed faulty engine start panel.

■ After passengers unloaded, ground crew noticed hydraulic fluid on No. 3 engine nacelle. Maintenance found pin-hole leak in spoiler hydraulic line. Line was replaced.

For more information on selected accident briefs, call DSN 558-2785 (334-255-2785). Note: Information published in this section is based on preliminary mishap reports submitted by units and is subject to change.

Aviation messages

Recap of selected aviation safety messages

Aviation safety-action message

C-12-98-ASAM-01, 141309Z Jan 98, operational.

In August 1997, C-12-97-ASAM-03 was issued to temporarily restrict use of the KLN-90B GPS for instrument approaches. A problem was identified that could affect course accuracy during GPS approaches at some airports. Allied Signal has since issued database cycle 9708, which masks the problem airports so that they are not available for selection and approaches using the KLN-90B. A permanent correction is forthcoming.

The purpose of this message is to notify C-12 operators of a potential hazard to flight and relieve the restriction of C-12-97-ASAM-03 if database cycle 9708 or subsequent is incorporated in the KLN-90B GPS.

AMCOM contact: Mr. Ron Price, DSN 788-8638 (205-842-8638), price-sf@redstone.army.mil

Safety-of-flight messages

AH-64-98-SOF-01, 271945Z Jan 98, operational.

The extended range fuel system (ERFS) was developed for self-deployment and ferry flights. Its increased mission capability has encouraged commanders to integrate it into daily operations and mission-essential tasks. However, use of ERFS carries an increased risk to flight crews and passengers. These risks include decreased maneuverability, performance, and responsiveness and increased possibility of postcrash fuel spill and fire.

An Army Safety Action Team (ASAT) convened 12 December 1997 and assessed the current risk of ERFS as "high." This is a joint U.S. Army Aviation Center and U.S. Army Aviation and Missile Command message implementing the recommendations of the ASAT to mitigate the risk of using ERFS.

The purpose of this message is to specify the decision-making process and minimum risk-control measures to be used when authorizing flight with fueled ERFS external tanks and provide authorization for fueled ERFS operations/training in the AH-64.

The message outlines correction procedures in three sections. The first contains mandatory risk-management and ERFS-equipped-aircraft flight-approval procedures. The second contains specific training information. The third contains information specific to the aircraft and the tanks.

USAAVNC contact: Mr. Gerald Smith, DSN 558-9006 (334-255-9006), gerald_smith@rucker-emh4.army.mil

AMCOM contact: Mr. Dave Scott, DSN 897-2068 (205-313-2068), scott-dc@redstone.army.mil

UH-60-98-SOF-01, 271945Z Jan 98, operational.

See AH-64-98-SOF-01 above.

USAAVNC contact: Mr. Walt Garner, DSN 558-1866 (334-255-1866), walt-garner@rucker-emh4.army.mil

AMCOM contact: Mr. Dave Scott, DSN 897-2068 (205-313-2068), scott-dc@redstone.army.mil

POV-fatality update through January

- No seatbelt
- Speed
- Fatigue

No new causes, just new victims.

FY98 = 39

FY97 = 22

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Class A Accidents through January

		Class A Flight Accidents		Army Military Fatalities	
		97	98	97	98
1ST QTR	October	0	2	0	0
	November	0	1	0	0
	December	1	2	0	2
2D QTR	January	2	2	2	0
	February	0		0	
	March	2		1	
3D QTR	April	2		2	
	May	1		1	
	June	3		0	
4TH QTR	July	1		8	
	August	0		0	
	September	0		0	
	TOTAL	12	7	14	2

U.S. ARMY SAFETY CENTER

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